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EXAMINER	
SUNG, CHRISTINE	
ART UNIT	**PAPER NUMBER**
2884	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,384	SKULTETY-BETZ ET AL.	
	Examiner	Art Unit	
	CHRISTINE SUNG	2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *0706*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 34 is objected to because of the following informalities:

2. Claim 34 appears to have a typographical error, as it depends upon an already cancelled claim. Further, if this claim was intended to be dependent upon claim 26, then it is a duplicate of claim 33. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 17-19, 26-28 and 31-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Szu (US Patent 5,952,957).

Regarding claim 17, Szu discloses a handheld measuring device for localizing at least one object enclosed in a medium, comprising:

at least one photometric sensor that obtains a first measurement signal of an object to be examined, wherein by evaluation of the measurement signal, information about an object enclosed in the medium is obtained (claim 9, Column 10, lines 54-56); and

at least one further sensor for generating at least one further second measurement signal for obtaining information about the object enclosed in the medium (claim 9, column 10, lines 57-59).

Regarding claim 18, Szu discloses that the at least one photometric sensor includes an infrared sensor (See claim 9, column 10, lines 54-56).

Regarding claim 19, Szu discloses that the at least one further sensor includes a radar sensor (See claim 9, column 10, lines 57-59).

Regarding claim 26, Szu discloses a method for localizing at least one object enclosed in a medium, the method comprising:

generating a measurement signal by at least one photometric sensor (see claim 1, column 9, lines 64-65);

evaluating the measurement signal to obtain information about an object enclosed in the medium (see claim 1, column 10, lines 1-4); and

evaluating at least one further measurement signal to obtain information about the object enclosed in the medium (see claim 1, column 9, lines 66-67 and column 10, lines 5-8).

Regarding claim 27, Szu discloses that the at least one further measurement signal is generated by at least one further sensor apparatus (See claim 1, Szu discloses an IR sensor and an radar sensor).

Regarding claim 28, Szu discloses that the at least one first measurement signal and the at least one second measurement signal are measured in a parallel fashion (See claim 1, lines 64-67, detection by both detector types are done separately, thus in parallel).

Regarding claim 31, Szu discloses that the measurement signals of a plurality of sensors are measured and evaluated, the sensors deriving from a group encompassing photometric sensors (See claim 1, infrared detector).

Regarding claim 32, Szu discloses that the at least one measurement signal of a sensor is optimized by evaluating at least one further measurement signal (column 4, lines 20-23).

Regarding claims 33-34, Szu discloses that the at least one photometric sensor includes an infrared sensor (claim 1, column 9, lines 64-65).

5. Claims 17-21, 24-27, and 31-34 are rejected under 35 U.S.C. 102(a) as being anticipated by Campana (US Pre Grant Publication 2003/019429).

Regarding claim 17, Campana discloses a handheld measuring device for localizing at least one object enclosed in a medium, comprising:

at least one photometric sensor that obtains a first measurement signal of an object to be examined, wherein by evaluation of the measurement signal, information about an object enclosed in the medium is obtained (see figure 7A, element 140 and see figure 5, discloses discovering an object element 40), ; and

at least one further sensor for generating at least one further second measurement signal for obtaining information about the object enclosed in the medium (See figure 7A, elements 70= Ground Penetrating Radar detector OR element 80= Electromagnetic Inductive detector, in addition to the IR detector, element 140).

Regarding claim 18, Campana discloses that the at least one photometric sensor includes an infrared sensor (see figure 7A, element 140 = IR sensor).

Regarding claim 19, Campana discloses that the at least one further sensor includes a radar sensor (element 70= GPR sensor = radar sensor).

Regarding claim 20, Campana does not disclose the specifics of the GPR. However, GPR detection systems inherently require a broadband sensor of a pulsed radar. (See Fossel et al, in cited pertinent art. This is merely cited to illustrate that this limitation is inherent to GPR).

Regarding claim 21, Campana discloses that the at least one further sensor includes an inductive sensor (Figure 7a, element 80 = Electromagnetic Inductive detector).

Regarding claim 24, Campana discloses that the at least two of the sensors are integrated into a common housing of the measuring device (see figure 6, element 30 = housing for all detector elements).

Regarding claim 25, Campana discloses that at least two of the sensors are disposed on a common circuit board (see figure 7A, all detectors share the common substrate).

Regarding claim 26, Campana discloses a method for localizing at least one object enclosed in a medium, the method comprising:

generating a measurement signal by at least one photometric sensor (Figure 7A, element 140 = IR detectors generate a signal);

evaluating the measurement signal to obtain information about an object enclosed in the medium (see claim 9, processor analyzes the data); and

evaluating at least one further measurement signal to obtain information about the object enclosed in the medium (see figure 7A, either elements 70 or 80, both provide another measurement).

Regarding claim 27, Campana discloses that the at least one further measurement signal is generated by at least one further sensor apparatus (see figure 7A, multiple types of sensor elements).

Regarding claim 31, Campana discloses that the measurement signals of a plurality of sensors are measured and evaluated, the sensors deriving from a group encompassing at least inductive sensors, and photometric sensors (See figure 7A, elements 80 and 140).

Regarding claim 32, Campana discloses that the at least one measurement signal of a sensor is optimized by evaluating at least one further measurement signal (see claim 9, all the data from the three types of sensors are processed).

Regarding claims 33-34, Campana discloses that the at least one photometric sensor includes an infrared sensor (See figure 7A, element 140).

6. Claims 17-18, 21-28 and 31-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Steinthal (US Patent 7034677 B2).

Regarding claim 17, Steinthal discloses a handheld measuring device (see figure 3A, element 15 = plurality of sensors) for localizing at least one object enclosed in a medium, comprising:

at least one photometric sensor that obtains a first measurement signal of an object to be examined, wherein by evaluation of the measurement signal, information about an object enclosed in the medium is obtained (column 21, lines 41-52, discloses detection of IR radiation); and

at least one further sensor for generating at least one further second measurement signal for obtaining information about the object enclosed in the medium (Column 21, lines 58-61 discloses detection of capacitance, inductance).

Regarding claim 18, Steinthal discloses that the at least one photometric sensor includes an infrared sensor (See column 21, lines 48-52).

Regarding claim 21, Steinthal discloses that the at least one further sensor includes an inductive sensor (column 21, lines 58-61).

Regarding claim 22, Steinthal discloses that the at least one further sensor includes a capacitive sensor (column 21, lines 58-61).

Regarding claim 23, Steinthal discloses that the at least one further capacitive sensor includes a high-frequency capacitive sensor that, by measuring an impedance of its electrodes, obtains information about objects enclosed in the medium (Column 21, lines 58-61).

Regarding claim 24, Steinthal discloses that at least two of the sensors are integrated into a common housing of the measuring device (See figure 3a, sensors are placed in housing element 10).

Regarding claim 25, Steinthal discloses that the at least two of the sensors are disposed on a common circuit board (see figure 5, all sensors are placed on the same PCB).

Regarding claim 26, Steinthal discloses a method for localizing at least one object enclosed in a medium, the method comprising:

generating a measurement signal by at least one photometric sensor (column 21, lines 41-52 discloses detection of IR radiation);

evaluating the measurement signal to obtain information about an object enclosed in the medium (Figure 3a, element 20 = digital signal processor); and

evaluating at least one further measurement signal to obtain information about the object enclosed in the medium (Column 21, lines 58-61 discloses detection of capacitance, inductance, another measurement).

Regarding claim 27, Steinthal discloses that the at least one further measurement signal is generated by at least one further sensor apparatus (See Column 21, lines 19-39).

Regarding claim 28, Steinthal discloses that the at least one first measurement signal and the at least one second measurement signal are measured in a parallel fashion (Column 18, lines 7-9).

Regarding claim 31, Steinthal discloses that the measurement signals of a plurality of sensors are measured and evaluated, the sensors deriving from a group encompassing at least capacitive sensors, inductive sensors, and photometric sensors (see column 21, lines 48-63).

Regarding claims 32, Steinthal discloses that the least one measurement signal of a sensor is optimized by evaluating at least one further measurement signal (See column 21, lines 19-39 discloses detecting and processing all measurements by the different sensors).

Regarding claims 33-34, Steinthal discloses that the at least one photometric sensor includes an infrared sensor (column 21, lines 48-52).

Claim Rejections - 35 USC § 103

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campana (US Pre Grant Publication 2003/0193429) in view of Clemens (US Patent 5,945,825A).

Regarding claims 28-30, Campana does not explicitly disclose the specific relationship between the measurement signals, however, parallel, quasi-parallel and series connections are well known in the art and disclosed by Clemens (see column 7, lines 38-55 and column 6, lines 58-61). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have applied one of the conventional types of connections as disclosed by Clemens to the invention as disclosed by Campana, as it only involves choosing from a finite number of identified, predictable solutions with a reasonable expectation of success.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting

ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 17-20 and 24-32 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 23, 24, 23, 27, 25, 26, 28, 32, 33, 34, 35, 36, 37, respectively of copending Application No. 10/589401. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both describe the same detector apparatus and method of detecting.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. NPL- Foessel et al., Radar Sensor for an Autonomous Antarctic Explorer- This reference was cited merely to show that GPR inherently requires a broadband pulsed source.

b. US Pre Grant Publication 20050262995- this reference disclose a multi sensor detection apparatus.

c. US Pre Grant Publication 2006/0284758- This reference discloses a multi sensor detection apparatus.

d. US Patent 6,341,551- This reference discloses a multi sensor detection apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTINE SUNG whose telephone number is (571)272-2448. The examiner can normally be reached on Monday- Friday 9-5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christine Sung/
Primary Examiner
Art Unit 2884